CHAPTER IV

ALTERNATIVES TO THE ADMINISTRATION'S MODERNIZATION PROGRAM

Some analysts have argued that the Administration's strategic buildup is too broad, that the United States is buying excessive capability. These arguments reflect several conclusions and concerns. One main concern is over the ramifications, discussed earlier, of emphasizing the targeting of military forces, communications, and leadership facilities. This concern has focused most strongly on Administration plans to add an abundance of hard-target capability. Another concern is that farther-reaching Administration goals both for arms control--such as sublimits on missile warheads--and for a ban on mobile missiles require deep reductions in offensive force levels that may be inconsistent with such an extensive buildup. An effective strategic defense may also be inconsistent with a mutual buildup of offensive forces.1/

The cost of the buildup is also a major concern. According to the Administration's budget plan, the share of the defense budget allocated to strategic forces would grow from about 11.9 percent in 1987 to about 13.4 percent in 1989. Growth would probably continue through 1992, although the Secretary of Defense has stated that the share of the budget would not exceed 15 percent in any year. Some Members of the Congress express concern that increasing funds for strategic forces takes away from funds needed to improve conventional capabilities. This concern may be especially valid if the Congress limits growth in overall spending for defense or actually reduces it.

1. According to Secretary of Defense Weinberger, current plans for SDI involve phased deployments beginning in 1994 or 1995. Some analysts believe that such plans make less sense with large amounts of offensive capability and that offensive force reductions should precede SDI. Others believe that deployed defenses will be the vehicle by which offensive forces will be reduced.

In light of these concerns, this chapter considers four alternatives to the Administration's plan that would reduce costs. It also examines the effects of these alternatives on the three main goals of the modernization program. All of the options assume the triad would be continued, since it has been a long-standing and, most observers believe, useful feature of the U.S. force posture. Some have advocated a fundamental change in this posture, such as moving toward a dyad of sea-based and air-based forces, or even solely relying on the submarine force. Since these changes would retain only a portion of the current force, they would certainly be less expensive in terms of simple expenditures. On the other hand, the overwhelming majority of policymakers have consistently decided that the diversity and security inherent in a triad of survivable forces enhances deterrence in ways that make it worthwhile.

ALTERNATIVE I: DO NOT BACKFIT TRIDENT SUBMARINES

The United States is currently procuring Trident submarines. Fourteen have already been funded, with plans to continue buying the submarines at the rate of one per year until about 20 have been bought. These submarines are designed to carry the large and accurate Trident II missiles, the first of which were authorized and appropriated in 1987.

Because Trident II missiles were not available when the submarines were deployed, the first eight of them were equipped with the smaller and less accurate Trident I missiles. Beginning in the early 1990s, the Administration plans to modify these submarines, remove the Trident I missiles, and replace them ("backfit" them) with the new Trident II missile.

One alternative for reducing costs would be to eliminate the modification and backfit of the eight Trident submarines with Trident II missiles. Under this option, only the last 12 of the 20 Trident

submarines would be deployed with Trident II missiles, thereby reducing Trident II procurement from 844 missiles to 660.2/

To support the extended deployment of the Trident I missile, its flight- test program would be continued until the year 2012. Although that extended test program would require 146 Trident I missiles, no additional Trident I missiles would have to be procured; rather, the increased demand would be met by Trident I missiles currently in the stockpile or deployed aboard Poseidon submarines scheduled for retirement. In all other respects, this alternative is identical to the Administration's plan.

Although the first backfit of a Trident submarine with Trident II missiles is not scheduled until 1991, the Congress could indicate its intention to pursue this option by deleting $14.9 million in fiscal year 1988 budget authority, which is designated to provide advance planning and to begin procurement of long-lead items for converting the eight submarines.

Effects on the Administration's Modernization Goals

This alternative could adversely affect one of the Administration's modernization goals--namely, increasing U.S. hard-target retaliatory capability--though substantial capability would remain. The actual effect would depend on the mix of Mark 5 and Mark 4 warheads the Navy plans to have on the Trident II missiles.3/ Only if the planned ratio of Mark 5 to Mark 4 warheads were greater than 60 to 40, would there be any reduction of hard-target warheads at all under this

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2. In some years, a maximum of 12 submarines would be deployed with Trident II missiles rather than 19 submarines as under the Administration's plan (of the 20 Trident submarines, one would always be undergoing an overhaul). As a result, seven fewer shiploads of missiles would have to be procured. In addition, the Demonstration and Shakedown Operations (DASO) program would be reduced by 16 missiles. Trident II procurement, therefore, would be reduced by 184 missiles ((7 x 24) + 16 = 184 missiles). The current Administration's plan, which only extends through 1992, includes 19 submarines and 815 missiles. Based on Navy data and testimony cited earlier, this analysis assumes that the inventory objective is 20 submarines and 844 missiles.

3. The Navy reportedly plans a mix of Mark 4 and Mark 5 warheads on Trident II missiles, but has not publicly revealed details of the plans.

alternative. Tables 7 and 8 illustrate an upper bound for possible reductions in this measure, comparing the alternative to a baseline in which all Trident II missiles carry the Mark 5 warhead. Table 7 indicates the reductions in inventory counts of hard-target warheads--a reduction of 1,536 warheads, or about 12 percent.4/

Among the alternatives in this study, this alternative represents the largest decrease in numbers of hard-target capable warheads, compared with a Trident force of all Mark 5 warheads. However, it is very likely that, compared with actual Navy plans for a mix of Mark 4 and Mark 5 warheads, there would not be any reduction of hard-target capability under this alternative. Table 8 indicates the reductions in warheads surviving a Soviet attack and available for retaliation in a case with strategic warning and with tactical warning.

In the most likely case of a Soviet attack with strategic warning, this option would represent a decrease of almost 30 percent in surviving hard-target warheads available for prompt retaliation. In a surprise attack, the reduction would be about 23 percent. The United States would still, however, have about 3,000 warheads available for prompt retaliation in the first case and about 900 in the second case. One could argue that even this level of capability surpasses what the United States would need to deter a Soviet counterforce attack, and that eliminating "excess" HTK-capable warheads could increase rather than decrease stability, since the Soviets may view them as weapons the United States intends to use in a first strike.5/

Furthermore, again depending on the mix of Mark 5 and Mark 4 warheads on the Trident II missile, the total number of SLBM warheads could increase under this alternative, providing increased capability against the "softer" set of targets. Finally, the United

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4. In contrast to previous chapters, this chapter focuses on warhead changes in the year 2000 when all U.S. procurements have entered the inventory. Earlier chapters focused on U.S.-Soviet comparisons, and Soviet estimates available to CBO do not include projections beyond the mid-1990s.

5. For an extensive discussion of hard-target capability, see Congressional Budget Office, *Trident II Missiles: Capability, Costs, and Alternatives* (July 1986).

TABLE 7. COSTS AND EFFECTS OF ADMINISTRATION'S STRATEGIC PLAN AND ALTERNATIVE APPROACHES

	Investment Costs (In billions of 1988 budget authority dollars)				Hard-Target Warheads in Year 2000 a/
	Budget Costs		1988-		
	1988	1989	1992	Total	
Administration's Plan	29.1	31.8	n.a.	n.a.	12,530
Savings/Changes Under:					
Alternative I: Do Not Backfit Trident Submarines	b/	0.2	0.8	5.8	-1,536 c/
Alternative II: Limit Further Land-Based Modernization					
No SICBM d/	2.2	2.3	18.0	37.4	-500
No Rail MX e/	0.6	1.2	8.4	8.4	-500
Alternative III: Cancel Manned Penetrating Bomber	n.a.	n.a.	n.a.	Over 40	+495
Alternative IV: Delay Further Modernization (Including ATB, SICBM, Rail MX, SRAM II) f/	1.7	2.4	17.9	n.a.	-424

SOURCE: Congressional Budget Office computations based on budget data.

NOTE: n.a. = not available.

a. These numbers represent inventory counts of ballistic missiles plus bomber weapons.

b. Less than $20 million.

c. This number represents the upper bound of possible reductions in hard-target warheads under this option since it is compared with a baseline in which all Trident II missiles carry the Mark 5 warhead.

d. The SICBM Selected Acquisition Report (SAR) does not include $1.6 billion (in current dollars) of projected savings in research and development costs. The Air Force has also identified significant production cost savings. These savings are currently being coordinated with the Office of the Secretary of Defense.

e. The MX Rail Garrison SAR excludes cost of production missiles, operational test and evaluation missiles, and initial spares for the Rail Garrison Basing Mode.

f. Savings from delaying the ATB are not available and are therefore not included.

TABLE 8. ILLUSTRATIVE EFFECTS OF ALTERNATIVES ON WARHEADS AVAILABLE FOR RETALIATION IN THE YEAR 2000

	U.S. Retaliatory Warheads Surviving a Soviet Attack					
	With Strategic Warning			With Tactical Warning		
	Total	Hard-Target Capable	Prompt Hard-Target Capable	Total	Hard-Target Capable	Prompt Hard-Target Capable
Administration's Plan	9,499	9,369	4,266	4,264	4,134	1,151
Changes Under:						
Alternative I: Do Not Backfit Trident Submarines a/	0	-1,209	-1,209	0	-798	-263
Alternative II: Limit Further Land-Based Modernization						
No SICBM	-405	-405	-405	-243	-243	-243
No Rail MX	-405	-405	-405	-20	-20	-20
Alternative III: Cancel Manned Penetrating Bomber	+432	+432	0	+130	+130	0
Alternative IV: Delay Further Modernization	-343	-343	-94	-131	-131	-56

SOURCE: Congressional Budget Office calculations.

NOTE: These figures represent on-line weapons counts. Counts are further adjusted for availability and assume that the United States absorbs a Soviet attack before retaliating. (This illustration uses attacking Soviet forces for 1996, because longer-range projections are not available.) In the case of tactical warning, they assume the SICBM retains 60 percent survivability which, unless the Soviets greatly expand their forces, is probably a lower bound if they choose to conduct a barrage attack. Only 5 percent of Rail MX is assumed to survive in a case with tactical warning because of the relatively small price to the Soviets to attack the system. In no case are airborne bombers assumed to be barraged because of the extremely adverse price to attack, and the fact they would still have to face heavy Soviet air defenses on their retaliatory mission. Furthermore, Soviet practice has reportedly been to keep their newer submarines closer to their own territory, which would lessen the threat of a barrage attack over time. All SLBMs at sea are considered prompt in the case of strategic warning; one-third of those at sea are counted as prompt in a case with tactical warning.

a. These numbers represent the upper bound of possible reductions in hard-target warheads under this option, since they are compared with a baseline in which all Trident II missiles carry the Mark 5 warhead.

States would also have a significant number of HTK-capable warheads on bombers that would be available for retaliation, though not promptly.

Other Effects

This option could lead to a trade-off between the optimal allocation of soft- and hard-target capable warheads in the Atlantic and Pacific Oceans, and optimal logistics. Only one of two Trident bases is currently equipped to handle the Trident I missile. If a mix of submarines with Trident I and Trident II missiles were desired at each base, additional equipment would be required. Basing all Trident I submarines in the Pacific and all Trident II submarines in the Atlantic may cause a less than optimal allocation against targets in the Soviet Union.

Savings

Savings would be relatively modest under this alternative. Costs would eventually be reduced by $5.8 billion (see Table 7). These savings reflect procurement of 184 fewer Trident II missiles and cancellation of plans to modify the first eight Trident submarines to carry the Trident II missiles. As was noted above, savings from buying fewer Trident II missiles need not be offset by the cost of buying more Trident I missiles. Only about $0.8 billion would be saved over the next five years and only about $0.2 billion in 1988 and 1989, the current years of the proposed two-year budget.

This option could also alter operating and support costs over the next decade. When it is fully carried out in about 10 years, the option should not affect operating costs significantly since the number of submarines would not be changed, just the number with Trident II missiles. During implementation, however, in the absence of the backfit program, more Trident submarines would be available for operation. If the Navy chose to operate them, that choice plus the additional costs of the extended Trident I flight-test program could add $0.9 billion to operating costs over the next 10 years when the backfits are under way. These added costs would offset investment savings noted above, making the effects of this option even more modest.

Thus, this option would be consistent with the assumption that the United States could maintain substantial strategic deterrence even with a potential reduction in the growth of hard-target warheads. Cost savings, however, would be modest. If the Congress wants significant cost reductions in the strategic buildup, it will have to consider more far-reaching changes.

ALTERNATIVE II: LIMIT FURTHER LAND-BASED MODERNIZATION

Today's silo-based ICBM force is widely considered vulnerable to a Soviet attack. The Administration's plans for shoring up the land-based leg of the triad include deploying about 500 small single-warhead missiles (SICBMs) in mobile launchers plus 50 of the 10-warhead MX missiles on rail cars.

Procuring both systems would cost a total of about $46 billion, and 15-year life-cycle costs would total about $58 billion. Quite conceivably, budgetary pressures will lead the Congress to consider choosing between the two systems, and indeed they have been increasingly treated as close substitutes.6/ They differ, however, in a number of ways, some of them potentially important to the Administration's modernization goals. For that reason, this alternative first examines the implications of a choice between the two programs and then assesses effects on modernization and costs.

Description of the Systems

Before one can examine the advantages and disadvantages of the two systems, it is important to understand how each system works. The SICBM would be a single-warhead missile deployed in a specially designed launch vehicle that is hardened to withstand a nuclear blast.7/ The MX is the same 10-warhead missile currently being de-

6. Both Senator Nunn and Senator Stennis remarked in recent testimony to General Chain, the Commander-in-Chief of the Strategic Air Command, that a choice will have to be made between the two systems because of fiscal constraints.

7. The Hard Mobile Launcher (HML) is widely reported to be hardened to withstand overpressures, on average, of 30 pounds per square inch.

ployed in existing silos, but the MX would be deployed aboard special railroad cars. Unlike the SICBM launcher, these railroad cars would not be designed to withstand a nuclear explosion.

Both systems would be mobile--that is, they are designed to move over large areas in order to make it difficult to destroy them with a nuclear attack. Indeed, with current technology, the only way to destroy them with a high degree of certainty would be to attack or "barrage" the entire area over which they are expected to be dispersed.

Although both systems are mobile, in peacetime they would be maintained in essentially fixed sites on military bases in order to minimize operating costs and avoid environmental problems. SICBMs are to be located at three Minuteman missile bases in the north-central United States.8/ The Rail MX missiles will be garrisoned at seven Air Force bases; the main operating base will be F.E. Warren Air Force Base, Wyoming. While in garrison, only a few of the missiles would be likely to survive a Soviet attack since their locations would be known. SICBM missiles can disperse randomly; Rail MX missiles have to travel along established rail lines. SICBM could be dispersed over more than 20,000 square miles within the 30 or so minutes of notice that a Soviet attack was under way. In contrast, MX missiles would require about six hours of advance warning to be dispersed sufficiently to achieve that same initial level of survivability (see Figure 9).9/

Advantages and Disadvantages of the Two Systems

The different designs of the two systems lead to varying advantages and disadvantages for each one. Thus, if the Congress decides to terminate one of these systems, it will not be an easy choice.

A fundamental difference between the two systems relates to the necessary warning conditions for their survivability. SICBM is

8. These bases are Malmstrom AFB, Montana; F.E. Warren AFB, Wyoming; and Ellsworth AFB, South Dakota.

9. Information is based on preliminary estimates by the Department of Defense.

designed to achieve high levels of survivability in the 30 or so minutes of tactical warning that a Soviet attack was actually under way. Figure 10 illustrates the number of Soviet SS-18 equivalent warheads required to destroy 50 percent and 90 percent of the SICBM force in its tactical warning dispersal area. The examples illustrate the enormous price to the Soviets of attacking the system. (For perspective, the entire Soviet ICBM and SLBM force during the time period of this analysis is expected to have between 700 and 800 SS-18 throwweight equivalent missiles). The SICBM system also has inherent flexibility to respond to a greatly increased Soviet threat by expanding its peacetime dispersal area, although at greater cost. For instance, an earlier plan had SICBMs on bases in the southwest where they would be randomly dispersed over about 4,000 square miles in peacetime. (The expanded dispersal area in Figure 10 assumes half the force is based at the Minuteman sites, and half at the southwest bases.)

A Soviet attack with tactical warning is usually described as a "bolt-out-of-the-blue" attack; described as such, it is considered a highly unlikely occurrence. However, a so-called surprise attack can also occur even if, in retrospect, there were strategic warning indicators. History is rife with examples of strategic warning indicators being misinterpreted, of policymakers being reluctant to act upon them, or of their being truncated somewhere in the chain of command.10/

Rail MX is designed to achieve high levels of survivability in an attack with strategic warning which, even allowing for the above possibility, is still widely considered to be the more likely case. Its survivability would depend on dispersal well in advance of warning of an actual attack, and it would be dispersed on the public rail network. Depending on the situation, this decision might be difficult--for instance, if an Administration did not want to alarm or involve the public at a particular time.11/ Its survivability is likely to be very low

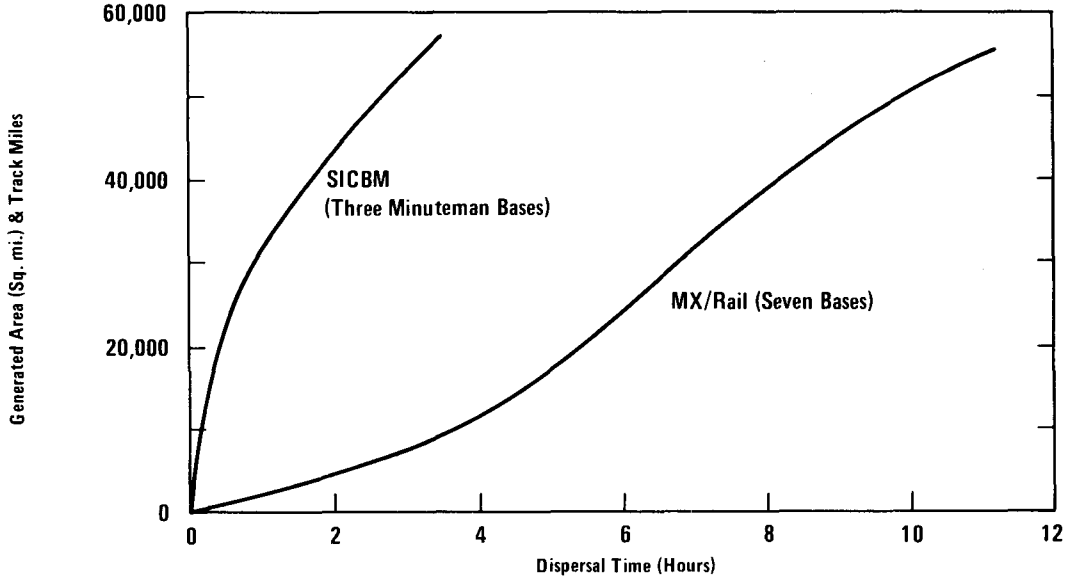
10. See Richard K. Betts, *Surprise Attack: Lessons for Defense Planning* (Washington, D.C.: The Brookings Institution, 1982).

11. Concern has also been expressed that early dispersal of MX over rail lines could interfere wtih other important activities on the rails such as transporting other war materiel. The Air Force indicates that the missile trains would account for such a small percentage of even normal activity on the rails--over 8,000 train start-ups a day--that they would not interfere. Furthermore, the missile trains would only be moving periodically to avoid being directly targeted.

if not dispersed well in advance of tactical warning, both because its dispersal area would be limited and because its 10 warheads per missile would be a lucrative target. To destroy 90 percent of Rail MX warheads in this case would require only 60 to 70 ICBMs of the SS-18 type.

What is the warning situation with respect to other legs of the triad? Significant costs are incurred in maintaining about 30 percent of the bomber force on constant alert in peacetime, so that those bombers may survive with tactical warning. Bombers not on alert would require strategic warning to survive. The survivability of the submarine force at sea is essentially independent of either tactical or strategic warning; the submarine force also incurs very high operation and support costs.

Figure 9.
Comparison of the Capability of the MX/Rail and Small ICBM

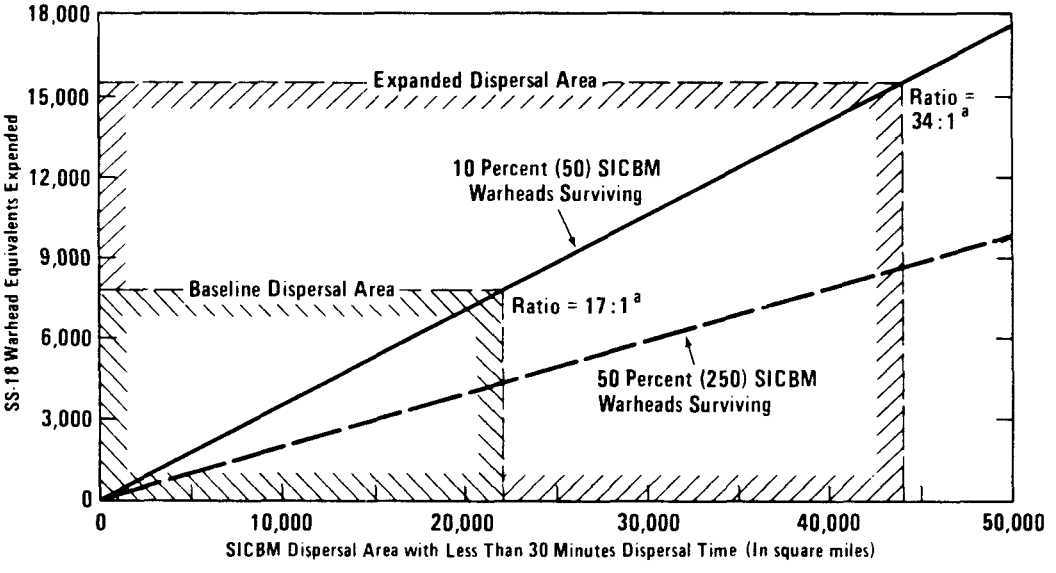


SOURCE: Congressional Budget Office based on preliminary estimates from Department of Defense.
NOTE: The dispersal capability of the SICBM is measured in square miles; that of the MX/Rail is measured in track miles.

Drawing conclusions about the appropriate warning sensitivity for the ICBM force from this picture is difficult. On the one hand, achieving some level of independence from strategic warning is obviously considered important and worth substantial cost. On the other hand, two legs of the triad have already achieved this independence, and the requirement for the ICBM force to also have this ability may be limited.

In addition to its advantages in a surprise attack, SICBM may meet other requirements that the MX does not. The Air Force has stated that it has a requirement for single-warhead missiles in the ICBM force for flexibility in targeting and presumably controlling escalation. Minuteman II missiles are currently the only ones available and, like the other silo-based missiles, are not considered likely to survive a direct Soviet attack. Moreover, at some point these

Figure 10.
Soviet Warheads Needed to Destroy 50 Percent and 90 Percent of U.S. Baseline SICBM Force, As a Function of Dispersal Area



SOURCE: Congressional Budget Office.

[a] Ratio of Soviet attacking warheads to U.S. SICBMs destroyed.

older Minuteman II missiles would have to be replaced with new missiles. Without SICBM, yet another missile may have to be developed. Finally, SICBM's launcher vehicle, which is hardened and off-road mobile, is more likely to survive during an extended conflict.

Cost and Cost-Effectiveness

Rail MX is clearly much cheaper than SICBM. To deploy 500 missiles, investment costs for MX are about 20 percent of those for SICBM--$8.4 billion for the MX compared with $37.4 billion for SICBM. Annual operating and support costs for the MX are also about 40 percent of those for SICBM--about $230 million compared with about $580 million. Thus, total costs to deploy and operate the system for 15 years amount to about $12 billion for MX and about $46 billion for SICBM.

Because the MX is so much cheaper to buy and operate, it is much more cost-effective, assuming that both systems are fully dispersed and thus likely to survive an attack. In this case, measured in terms of a 15-year life-cycle cost per on-line surviving warhead, Rail MX costs only about $29.6 million per warhead compared with $113.6 million per SICBM warhead (see Table 8 for surviving warheads).

In the event of a surprise attack, however, SICBM would be the more cost-effective system. Assuming a probable lower bound for SICBM survivability of 60 percent--in terms of surviving warheads available for retaliation--Rail MX would cost about $600 million per warhead, while SICBM would cost about $189 million per warhead.

Effects on the Administration's Modernization Goals

A decision not to deploy either SICBM or Rail MX will have adverse effects on the buildup of U.S. warheads, though many warheads would still remain. For example, before any Soviet attack, either SICBM or the MX would provide 500 warheads. Since about 90 percent are expected to be on-line, terminating either system could reduce available hard-target weapons by about 450. Nonetheless, about 5,500 hard-target ballistic missile warheads would remain in the U.S. arsenal even without one or the other of these systems. More of these warheads, however, would be based on submarines, increasing the

risks involved in some failure of this system. The effects on U.S. capability after a Soviet attack depend on the assumptions that are used. The numbers of warheads that would be lost depend on assumptions regarding the scenario for attack and the degree of dispersal of each system.

Savings

Savings under this alternative depend on whether the Congress elects to terminate SICBM or rail MX. Terminating SICBM would save $18 billion in investment costs over the next five years, and by 1999 would save a total of $37.4 billion. Savings in 1988 would amount to $2.2 billion. Canceling SICBM would also eventually save about $580 million a year in operating costs (see Table 7).

Terminating the MX would reduce investment costs by $8.4 billion, with almost all savings occurring over the next five years. Savings in 1988 would equal $0.6 billion. Savings from operating costs would total about $230 million annually.

These savings are difficult to put into perspective because, as noted in Chapter III, total planned costs for strategic modernization under the Administration's plans are not available beyond 1989. Solely for the sake of illustrating the effects of this option, however, assume that strategic investment costs under the Administration's plans grow in real terms by an average of 5 percent a year in the 1988-1992 period, reflecting the large number of new systems entering procurement. With such growth, canceling SICBM represents a reduction in investment costs of about two percentage points in the annual growth rate. Canceling MX would have much more modest effects.

ALTERNATIVE III. CANCEL MANNED PENETRATING BOMBER

Terminating either the Rail MX or SICBM program--but especially the SICBM program--would substantially reduce costs. The Congress could also reduce costs markedly by forgoing a manned penetrating bomber. This option would cancel procurement of the Advanced

Technology--or "stealth"--Bomber (also known as the B-2) and would rely instead on the old B-52s and the new B-1Bs. To arm them fully would require additional procurement of about 1,200 advanced cruise missiles. Since the B-52Gs would be retained longer under this option than under the Administration's plan, additional modifications beyond those already planned might also be needed. These modifications would increase reliability, maintainability, and sustainability, and would add to costs. The B-1B would retain its shoot-then-penetrate role as in the Administration's plan.

Effects on the Administration's Modernization Goals

This option would show a modest increase in the numbers of warheads reflected in the quantitative measures of U.S. capability (see Tables 7 and 8). The United States would, however, forgo the advantages and flexibility of an advanced manned bomber better able to penetrate Soviet air defenses, which the Administration believes is important to deterrence. Thus, the Administration's third modernization goal would not be fully met.

How important is this goal? The main mission for a manned penetrating bomber is to detect and destroy mobile targets, and the number of mobile missiles and mobile command and control systems is likely to grow significantly in the Soviet Union. Proponents of a manned penetrating bomber believe that deterrence requires U.S. ability to put a significant portion of these targets at risk in the event of Soviet aggression.

Mobile systems, however, are generally thought to enhance stability and deterrence, since they significantly reduce the value of an attack and since they can provide some assured retaliatory capability. In a crisis, if neither nation felt it would lose its retaliatory capability to a preemptive attack by the opponent, the pressure to use these forces first would be reduced. The importance of survivable forces grows as both nations incorporate more accurate, prompt weapons in their arsenals.12/ Thus, opponents of this mission believe that it contradicts U.S. efforts to encourage both sides to deploy more

12. Survivability would also be of greater importance if force levels were greatly reduced under arms control.

survivable, stabilizing weapons systems, and that it may increase pressure for another round of the arms race if the Soviets seek ways to protect their mobile systems or to attack U.S. mobile systems. Furthermore, it is hard to evaluate how effective a manned bomber would actually be in search-and-destroy efforts occurring after a nuclear exchange.

Damage assessment--another mission for penetrating bombers--may also possibly be accomplished by satellites or very-high-altitude reconnaissance aircraft, although their ability to operate after a nuclear attack is also questionable. Nor would cancellation of the Advanced Technology Bomber inhibit use of stealth technology for conventional (non-nuclear) defenses. The United States plans to procure advanced fighters with stealth characteristics, thus allowing continued development of the technology for conventional missions.

Under this option, the overall effectiveness of the bomber force is likely to be reduced, since two penetrating bombers with different penetration characteristics as well as cruise missile carriers can stress Soviet air defenses and provide more extensive target coverage. However, in the alternative force, the B-1B would still penetrate and presumably could focus on a smaller set of high-priority targets, and the alternative force would have more cruise missile carriers.

Savings

Savings under this option cannot be assessed accurately, though they are likely to be substantial. The Advanced Technology Bomber program is a highly classified, "black" program; only the most aggregate information about costs and capability have been made public.

Nonetheless, this option would probably reduce costs sharply. Based on press reports of DoD statements, the total cost of developing and procuring the ATB would be about $57 billion. Although some of these funds have already been expended, most have probably not yet been spent since the ATB is not expected to have its initial operating capability until the early 1990s. There would, however, be some added costs under this option. For example, under this option an additional 1,200 advanced cruise missiles would have to be procured, another program for which costs are not publicly available.

When all the pluses and minuses are totaled, this option could probably reduce costs over the next decade by a total of $40 billion or more. A substantial amount of these savings would occur over the next five years and would markedly alter strategic costs.

Operating costs under this option could well increase, though again it is difficult to know by how much. Operating and support costs to maintain B-52G bombers in the force until the year 2000 would total nearly $10 billion. These added costs would be offset, because costs to operate and support a larger number of the ATBs would not be incurred under this option. Again, those costs are not publicly known.

ALTERNATIVE IV: DELAY FURTHER MODERNIZATION

The Congress may decide that it does not wish to eliminate a manned penetrating bomber or survivable land-based missiles but still must hold down costs. It could accomplish this by delaying procurement of new programs but not canceling them. Senator Sam Nunn, Chairman of the Senate Committee on Armed Services, has recommended this general approach--though not necessarily the specifics of this option.

This option would delay all major weapons programs in research and development for three years, maintaining R&D at 1987 funding levels in real terms but assuming no increase in total planned R&D expenditures. Programs delayed would include the ATB, the SICBM, Rail MX, and the SRAM II attack missile.

Effects on the Administration's Modernization Goals

This option would delay modernization and upgrading of the triad, the first of the Administration's three goals. The major systems affected by this option would probably not begin to be deployed until the mid-1990s whereas, under current plans, they would be largely deployed by this time. Also, this option would delay the goals of having a new manned penetrating bomber and survivable ICBMs.